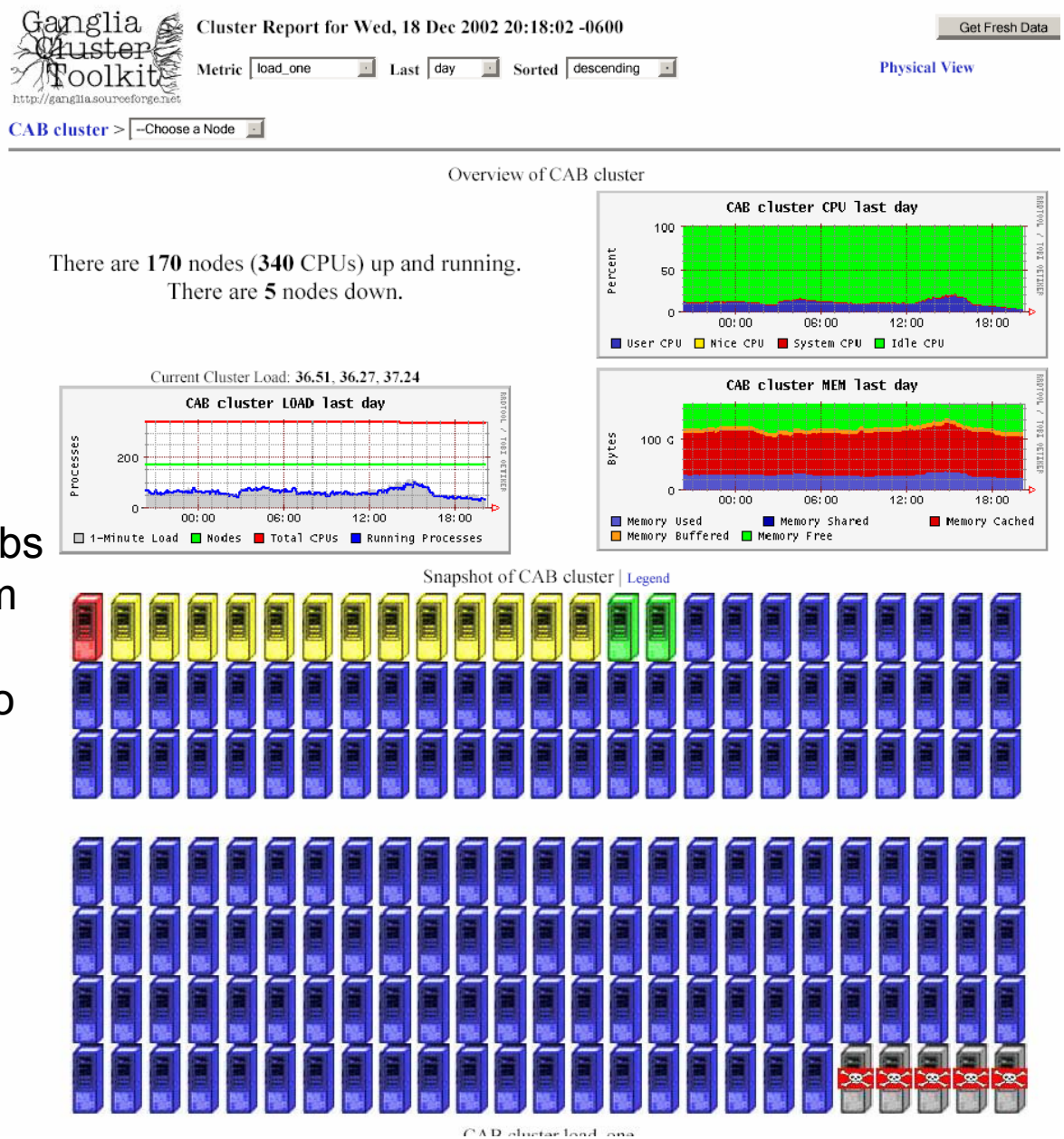
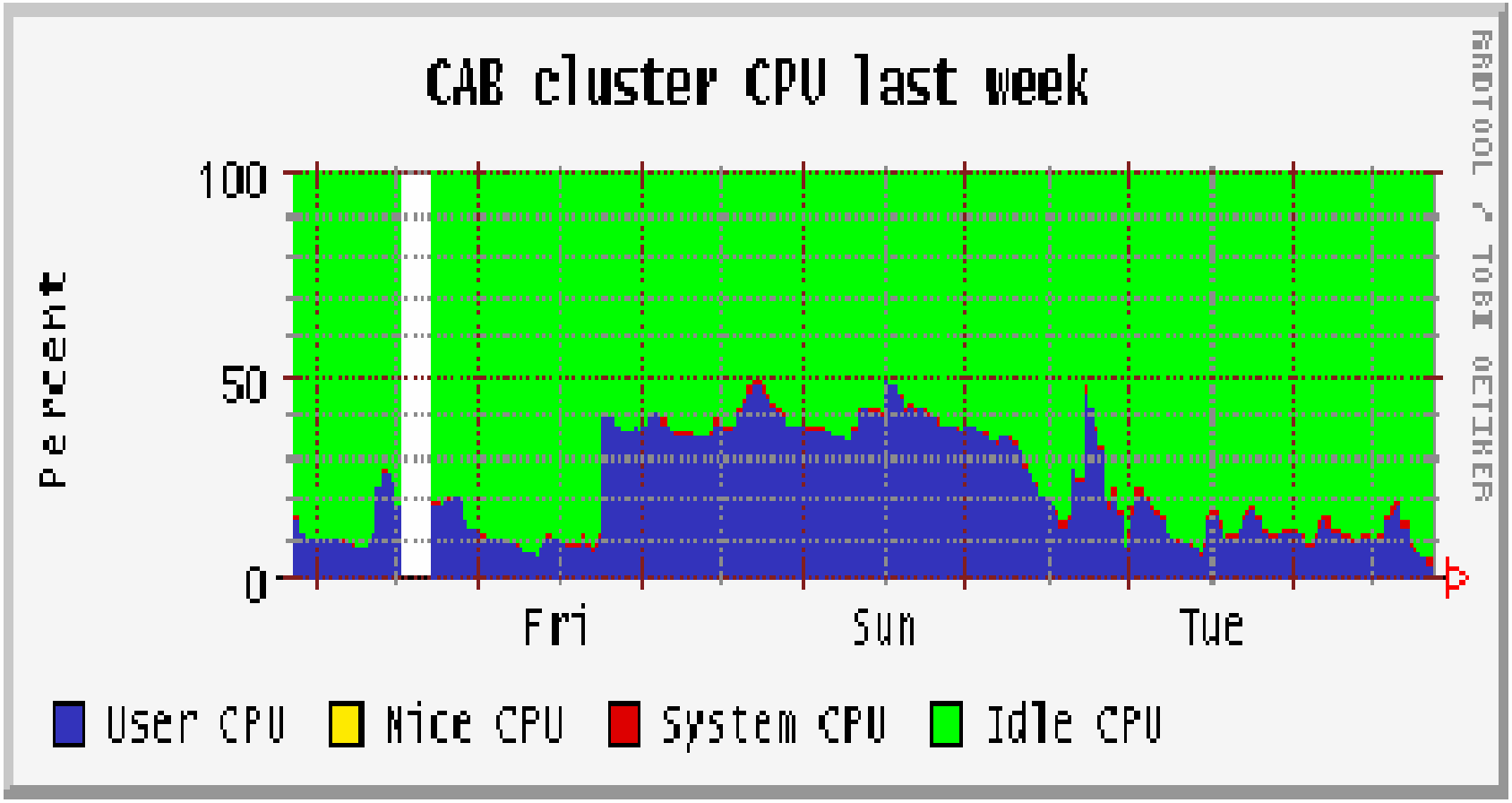
Cab users report

Dec 19, 2002

CPU = 12 x d0mino
5 TB of local scratch for jobs
5 Tb of local cache for sam
100 Mb connections
1 Gb connection to d0mino




CAB cluster CPU last week
Percent
100
50
0
Fri
Sun
Tue
User CPU
Nice CPU
System CPU
Idle CPU
RRDTOOL / TOBI OETIKER

Access methods

- D0tools (Vivek, Peter…)
  - SAM access – fast especially for thumbnails
  - Project areas – slow if try to run too many simultaneous jobs.
- mcrunjob (Roger)
- root access not set up yet…

documentation

- http://www.nuhep.nwu.edu/~schellma/cab/cab_doc.html
- http://listserv.fnal.gov/archives/d0cab-users.html
- http://www-clued0.fnal.gov/lancs/cab/index.html

- rund0exe -h

Sample d0tools command

```
rund0exe -exe=ThumbNailSAM_x -rcp=runThumbNailSAM.rcp \
-rcppkg=thumbnail -localbuild -localrcp -localfwkrcp \
-defname=$definition -maxopt userpostscript=postscript.sh    \
-name=$1 \
-cab  -scratch=$SCRATCH/junk -jobs=10 -jobname=$1 \
-cabouthost=d0mino.fnal.gov -caboutpath="/prj_root/846/cd_1" \
-cabtar=new.tar
```

- -cab turn it on
- -scratch [–cabtar] path and name of tarball
- [-cabouthost][-caboutpath] other location for output
- [-jobs] = number of parallel jobs
- [-jobname] = name for those jobs

Parallel jobs

- Thanks to Reiner Hauser, M. Verzocchi and Sam team…
- SAM only
- Sam was designed to run parallel
- You start a project
- It starts a consumer
- Up to 20 consumer processes on 20 machines can attach,
- Your job runs 20 times faster…

- (the 20 is a limit in d0tools, sam on farms runs with 100)

Known problems

1. Can’t run large number of jobs off single project disk.
2. Sam behavior on timeout is to throw exception which framework does not catch. Do we want to change this?
3. If framework gets no files in a parallel job process, it core dumps, things are actually fine as the files went elsewhere but how do we handle this?
4. Pbs batch system hangs
    1. Bad nodes
    2. Heavy traffic (see 1)
5. Some code (trigsim?)seems to load in strange libraries from gcc which it shouldn’t and can’t on the cab…
6. Bash not compatible…
7. ????

Future

- New d0tools version that has cleaner clued0 submit – M. Verzocchi.
  - setup d0tools –d

    Does this make it possible to submit from bash?
- Make it possible to run from project disk one file at a time by copying to local scratch

Reprocessing strategies

- On the cab you can run through a lot of data on many nodes fast but that means you will hit a 1/1000 error pretty often.

For group skims going back into sam as thumbnails

- Get an application family/version
- Say wzskim v00-00-01, bphys-skim v00-00-04
- Check out sam_manager and change the rcp to contain:

string ApplicationName = “wzskip"
string ApplicationVersion = “v00-00-01“
int FileParentageMode=1
string DataTier = “thumbnail-bygroup” // new in test releases

Your output will then have metadata with the correct information, identifying the processing as your groups skim with a given version.

Store back into sam…

Robust resubmission

__set__ yourset minus (file_analyzed > 0 and data_tier_analyzed thumbnail-bygroup and version_analyzed v00_00_00 and appl_name_analyzed wzskim)

This is your original input set minus all files that have children from your processing, as opposed to someone elses.

Getting only unconsumed files - M. Verzocchi

```
sam create dataset definition --group="dzero" \
    --defname="root1112base" \
    --dim="version p11.12% and data_tier root-tuple"

sam create dataset definition --group="dzero"
        --defname="root1112notprocessed" \
    --dim="__set__ root1112base minus \
   (project_name mv-proc1112-% and \
    consumed_status consumed and consumer mverzocc )

and then every time you submit a project do

set TIMESTAMP=`date +'%m%d%Y-%H:%M:%S'`
setenv SAM_PROJECT "mv-proc1112-$TIMESTAMP"
sam submit --defname="root1112notprocessed"
```

If a job fails you can recover using the timestamp…